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PIERRE C. ZOELLY

AN ESSAY TOWARD
ARCHITECTURE

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AN ESSAY TOWARD

ARCHITECTURE

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**To Hans and Bob
philosophers and architects
who inspired the worker
and finished the work.**

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INTRODUCTION

WHO ARE WE?

A human race of mixed blood, full of compromises, scared by wars and pushed by money.

WHERE ARE WE?

In a world full of dirt, smoke and gasoline odor, where beauty is confined to museums and vulgarity exposed in every shop window.

WHY ARE WE HERE?

Because we believe that there is an ideal of beauty and truth to be achieved, that not all of nature is spoiled, that God is not dead, and that there are still some good men left to make life worth living.

WHAT IS ARCHITECTURE?

Architecture is the living-spirit of building truly and beautifully.
(Frank Lloyd Wright)

Architecture is the art of organizing space.
(Auguste Perret)

Architecture is the business of establishing emotional relationships by means of raw materials. (Le Corbusier)

Architecture is the art of making the content and forms of a civilization coincide. (William Lescaze)

Architecture is the will of the epoch translated into space. (Mies van der Rohe)

Architecture is the objectified correlation of man and his world within the empirical reality of space.
(H. A. Vetter)

MAN AND SPACE

ARCHITECTURE SERVES MAN:

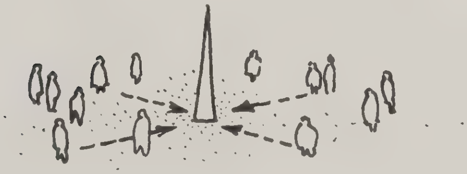
A path	is a	functional	creation for man's	movements;
a house a home	is a	functional symbolic	creation for man's	comfort happiness;
a monument	is a	symbolic	creation for man's	memory.

ARCHITECTURE INVOLVES SPACE.

A PATH SCANS SPACE. by indicating a direction for exploring space;

a house contains space by limiting an enjoyable portion of space to live in;

a monument integrates space by establishing a center of interest in surrounding space.

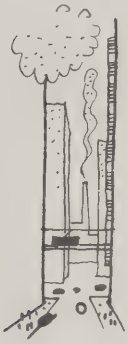


MAN is an organic creature of the universe.

He needs:

space to move in,
air to breathe,
light (sun) to see by,
food to eat,
comfort to relax in.

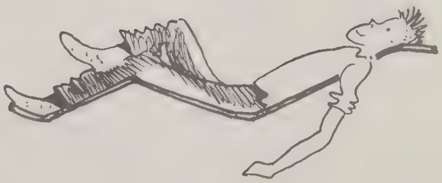
Tradition, culture, climate, wealth etc. are factors which influence man's attitude toward these basic needs and establish his conditioned behavior.



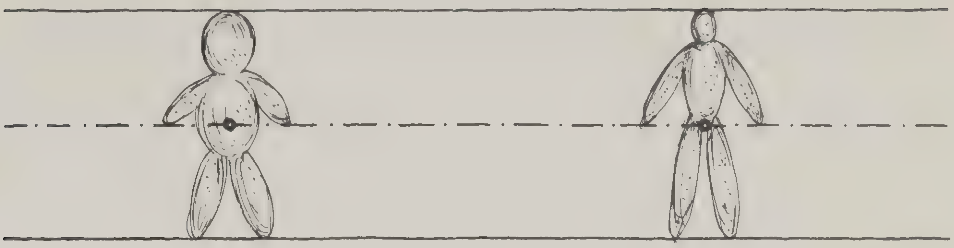
air

sun

comfort

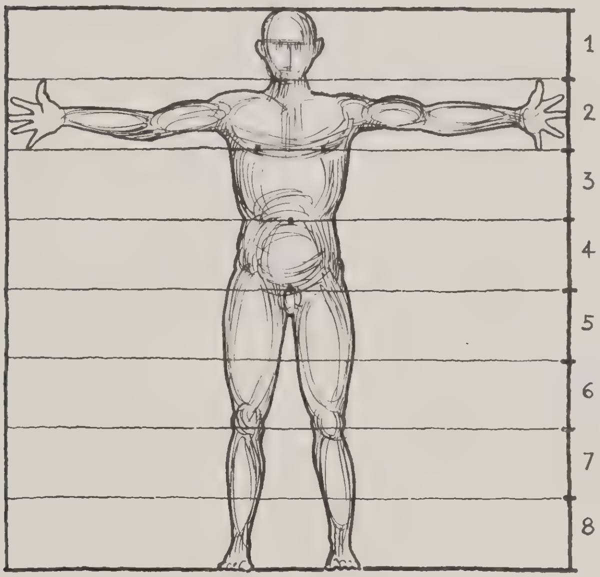


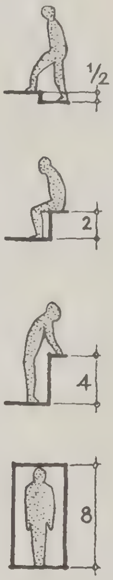
Man has definite proportions.



During the development from birth to maturity the center of the human body shifts from the point where life is received to the point where life is given.

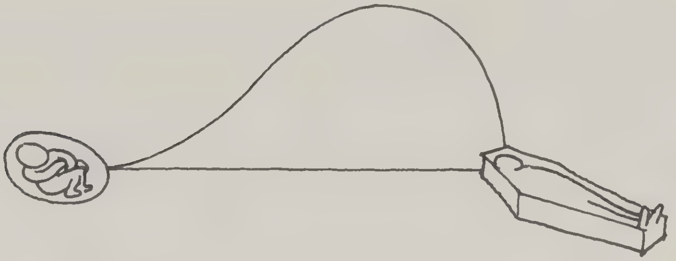
The handspan is an anthropometric module:





"Man is the measure of all things." (Protagoras)

From birth to death man occupies SPACE.

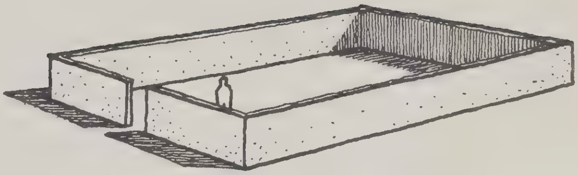


His capacity to perceive space increases and decreases in direct proportion to his development.

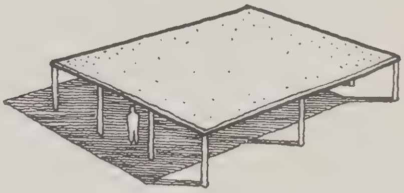
The universe is unlimited.

Architectural space is always limited:

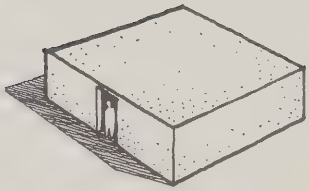
1. horizontally by walls,
   e. g., court



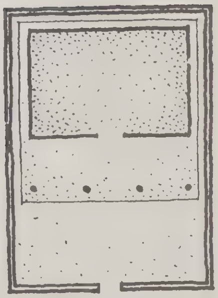
2. vertically by roof,
   e. g., porch



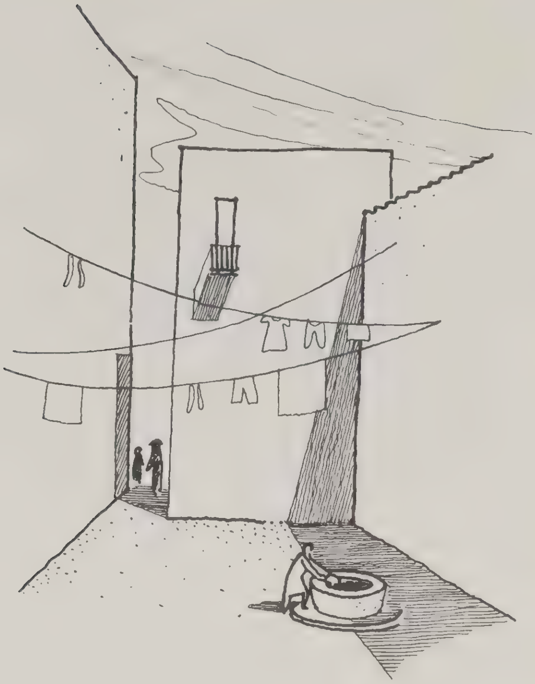
3. by a combination of both,
   e. g., room

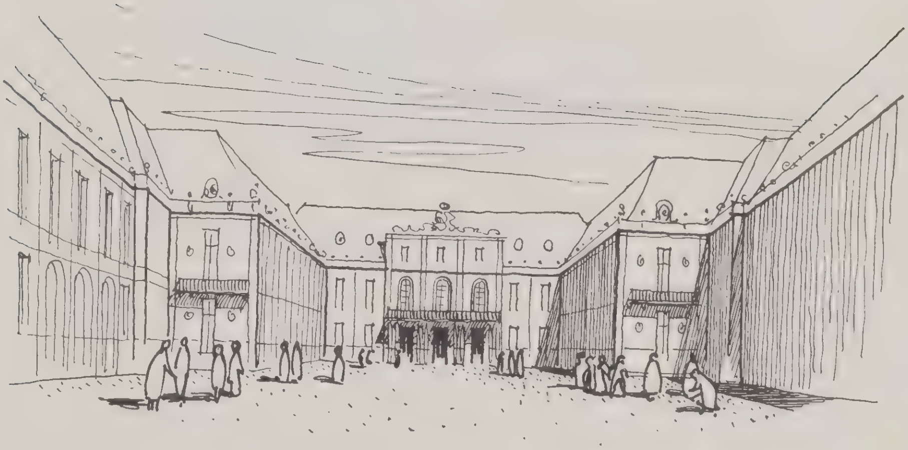


The "Megaron" house fuses these 3 elements:

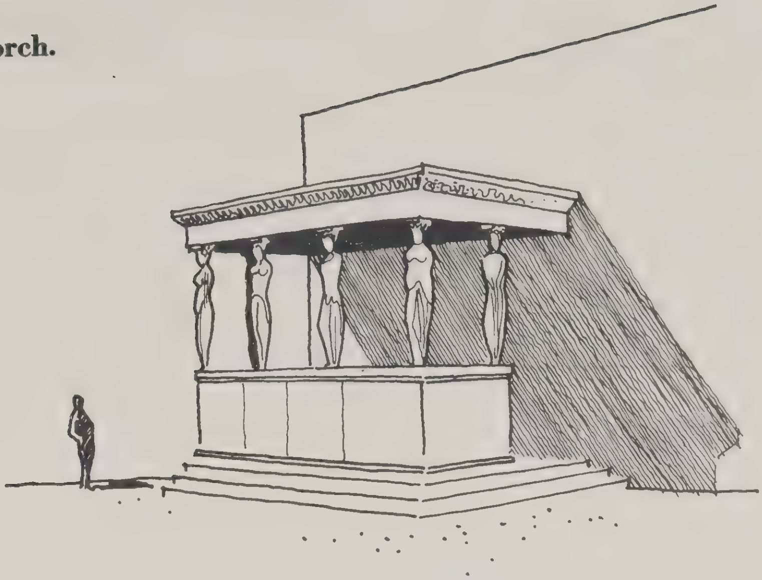


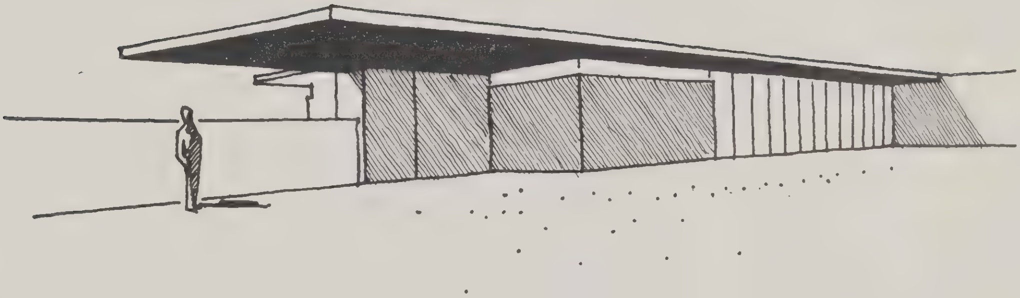
The Court.



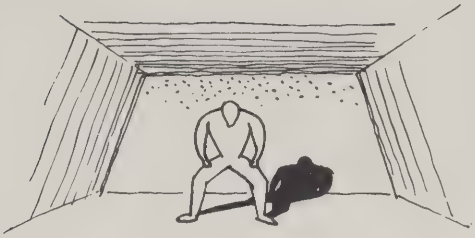


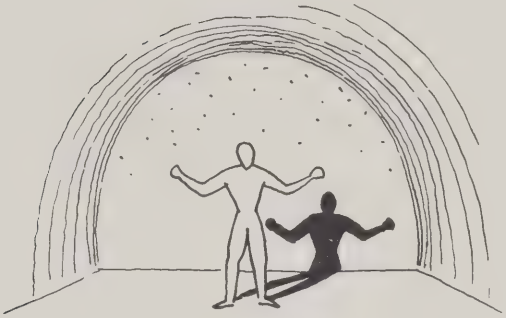
The Porch.

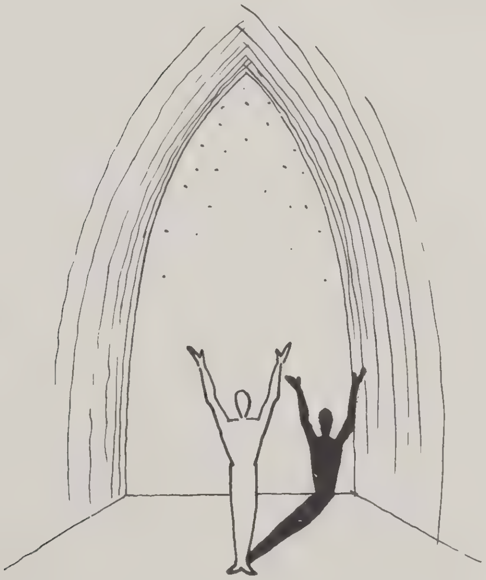




The Room.

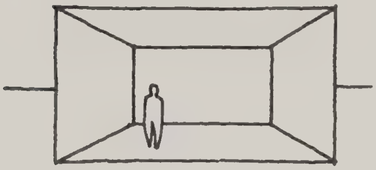


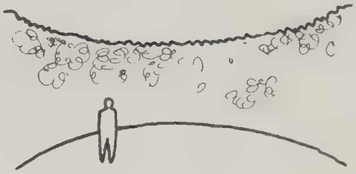


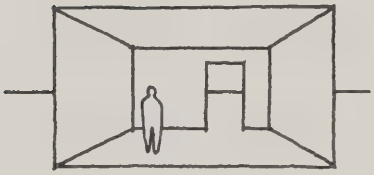


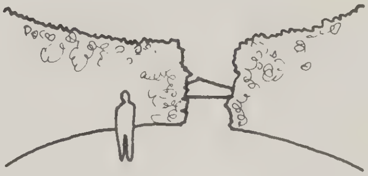
The varying degrees of containment

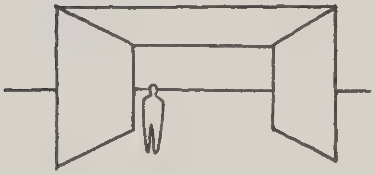
in the house: **and in the garden:**

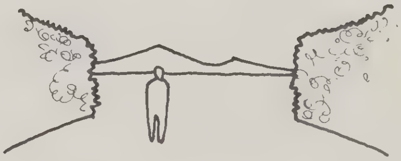


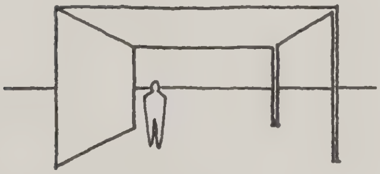


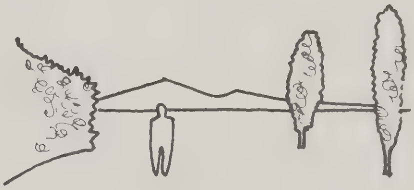


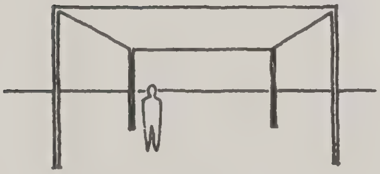


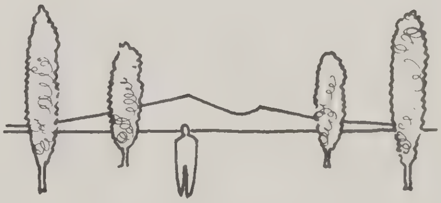












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The Alberti-Vetter Theory of Architectural Conception:

SHAPE	FORM	STYLE
physical	vital	spiritual
Region	Landscape	Garden
Trace	Plan	Cult
Place	Floor	Socle
Barrier	Wall	"Mure"
Cover	Roof	Cupola
Hole	Opening	Doorway

(Abstracted from Vetter's "Tabula Tetralogica Architecturae")

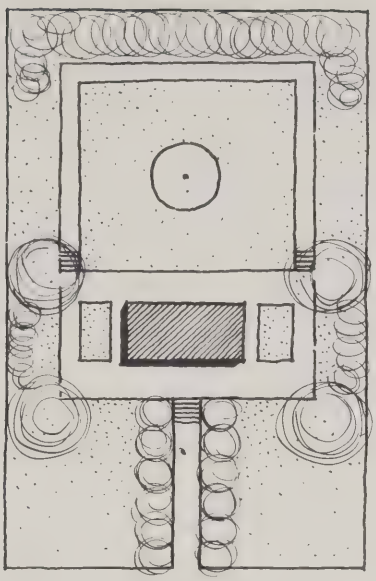
REGION–LANDSCAPE–GARDEN

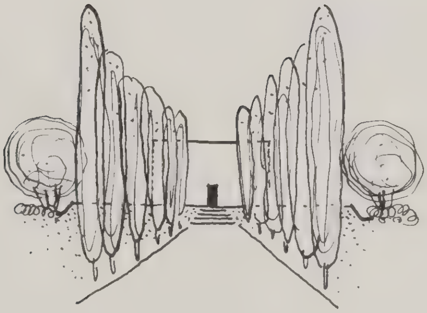
REGION: A part of the earth anticipated by man.

LANDSCAPE: A part of a region organized by man.

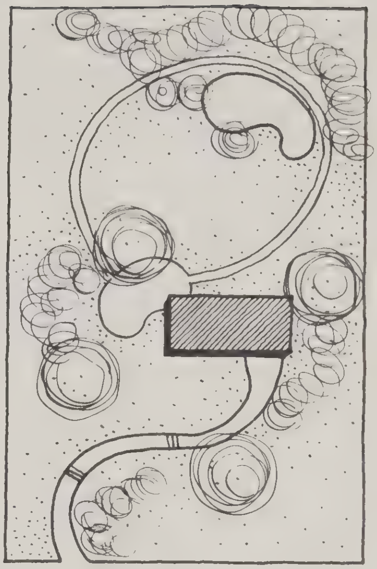
GARDEN: A part of a landscape stylized by man.

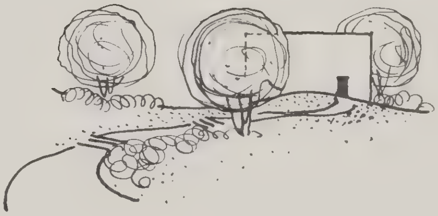
The “classical” garden



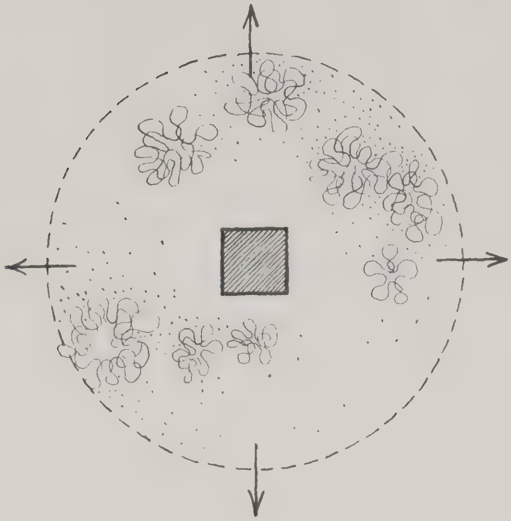


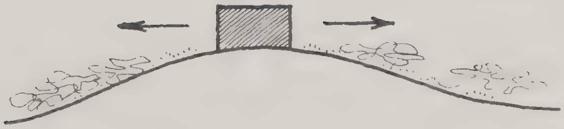
The “romantic” garden



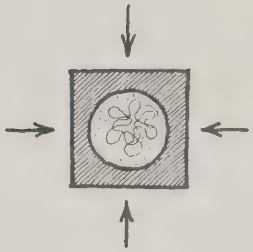


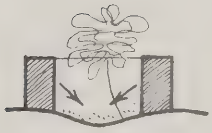
The open garden



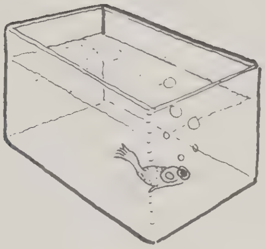


The enclosed garden





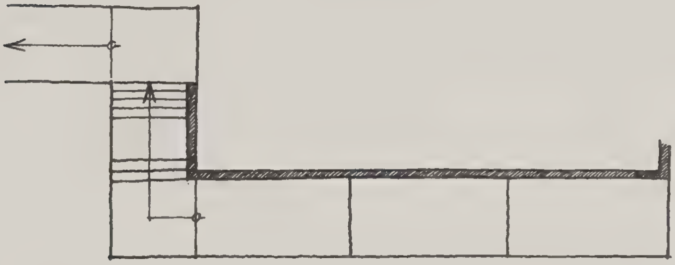
Substitutes for a garden:



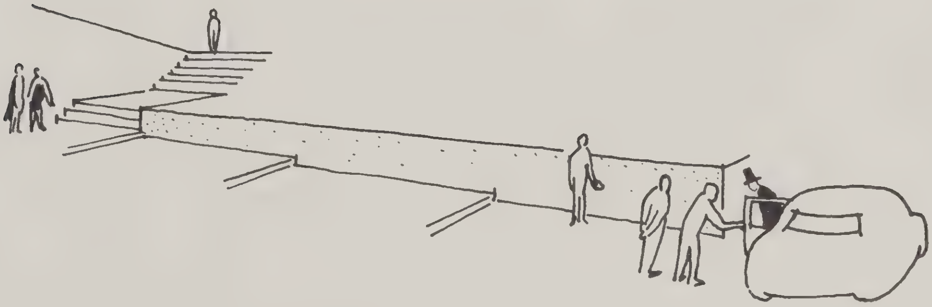
TRACE–PLAN–CULT

TRACE: An evidence of effective movements.

PLAN: An expression of conscious movements.



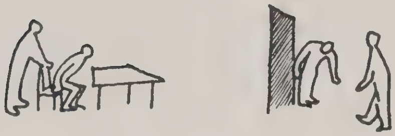
CULT: An exposition of self-conscious movements.



Manifestations of CULT

in domestic life:

formal manners for reception and table;



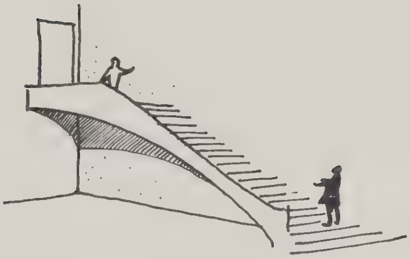
in civic life:

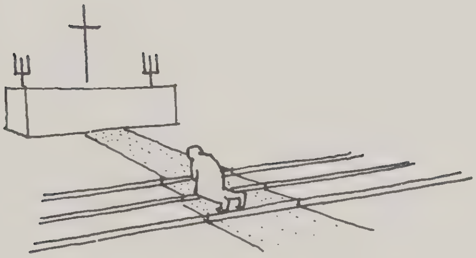
ceremonies for graduation, oath and voting (rare);

in religious life:

sacred rites of baptism, confirmation, matrimony and funeral.

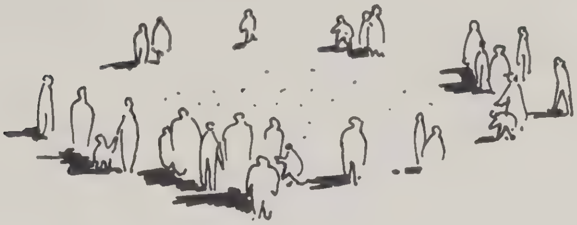
THE STAIR is one of the most significant elements of a plan because it symbolizes man's movements in 3-dimensional space.



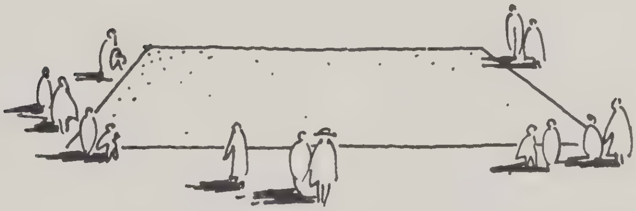


PLACE – FLOOR – SOCLE

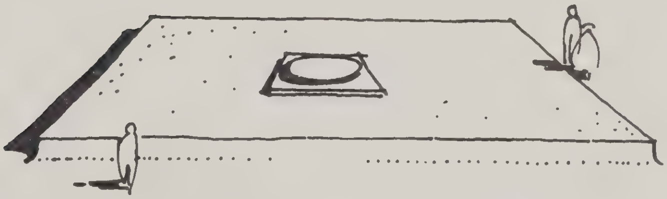
PLACE: A location on earth without limitation or meaning.



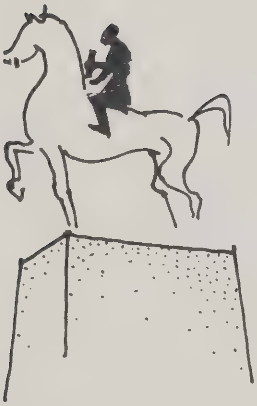
FLOOR: A location on earth with limitation but without meaning.

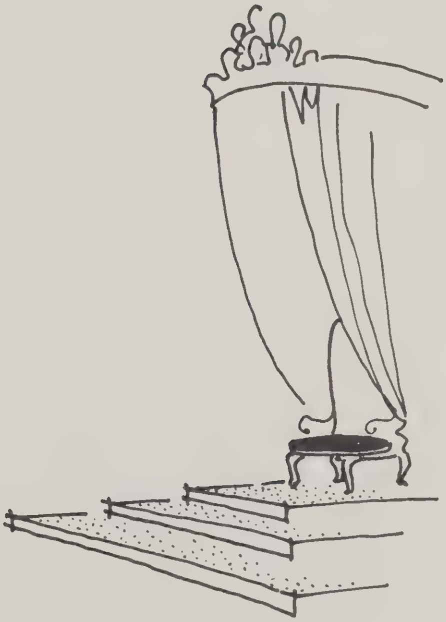


SOCLE: A location on earth with limitation and meaning.

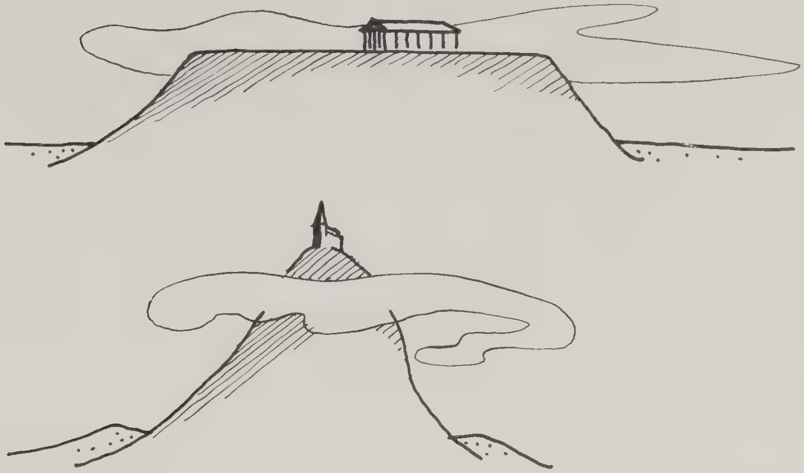


A SOCLE implies symbolic values:

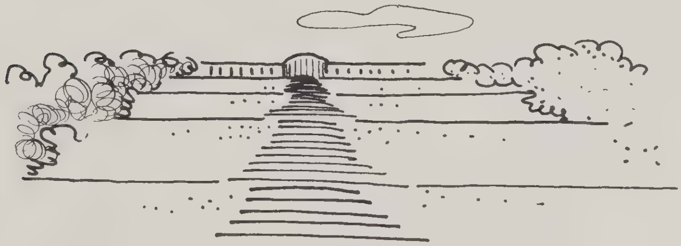




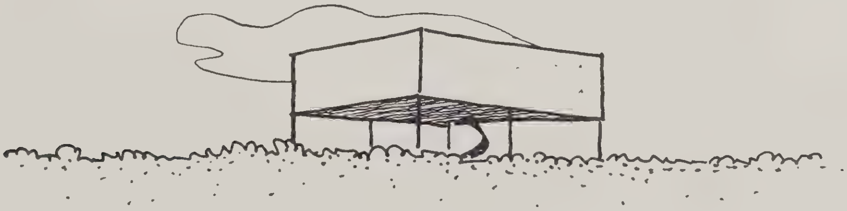
Natural socles: Greek temple, medieval chapel.



Natural socle, artificially enhanced: German palace.

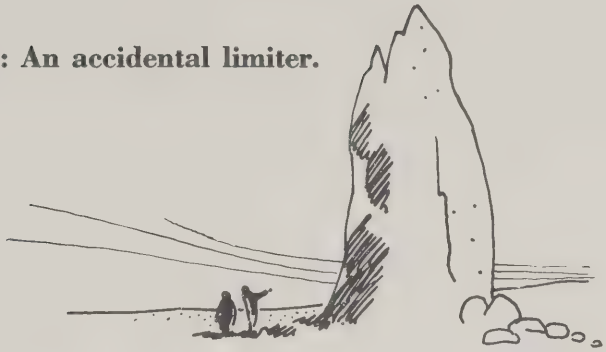


Artificial socle: house in Long Island.



BARRIER–WALL–"MURE"

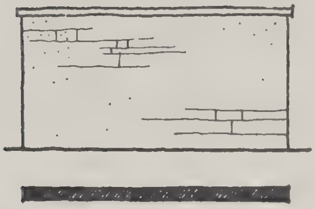
BARRIER: An accidental limiter.



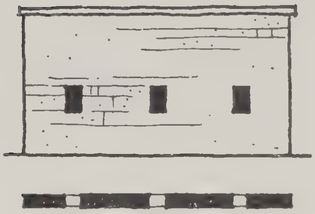
WALL: A functional limiter.

"MURE": A symbolic limiter.

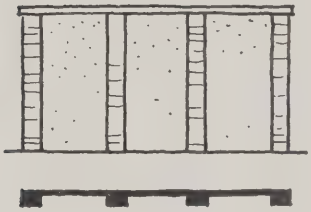
The wall has two functions: support and curtain.



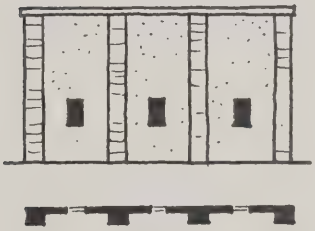
support continuous
curtain closed



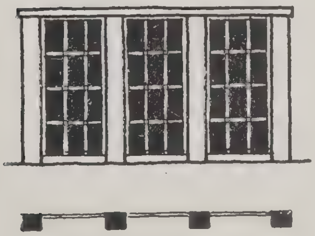
support continuous
curtain slightly opened



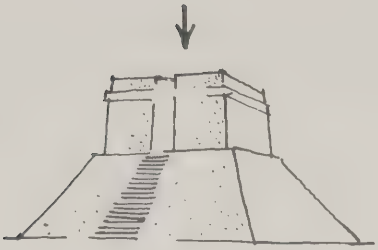
support discontinuous
curtain closed



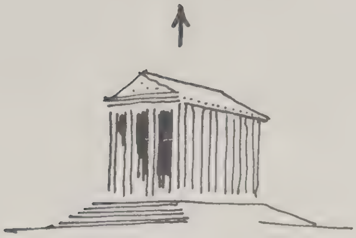
support discontinuous
curtain slightly opened



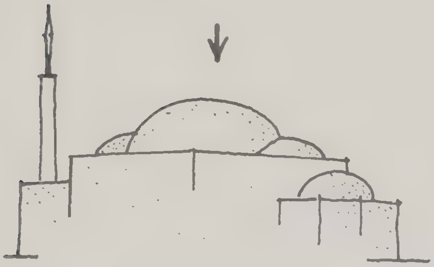
support discontinuous
curtain widely opened



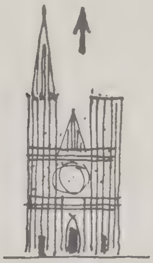
**Mexican temple:
support continuous,
curtain closed.**



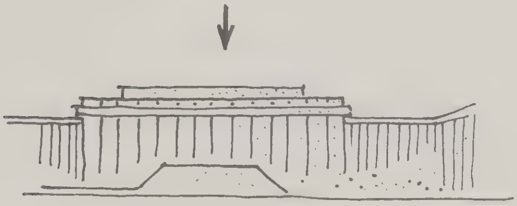
**Greek temple:
support discontinuous,
curtain opened.**



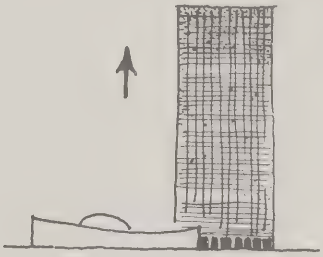
**Byzantine church:
support continuous,
curtain closed.**



**Gothic church:
support discontinuous,
curtain opened.**



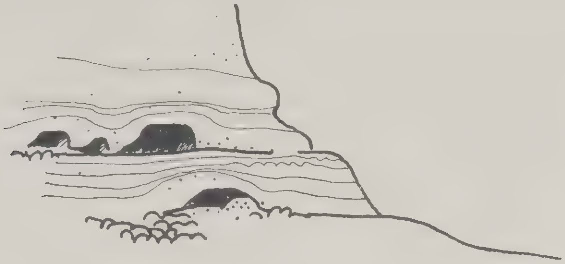
**U. N. building in Geneva:
support discontinuous,
curtain closed.**



**U. N. building in New York:
support discontinuous,
curtain opened.**

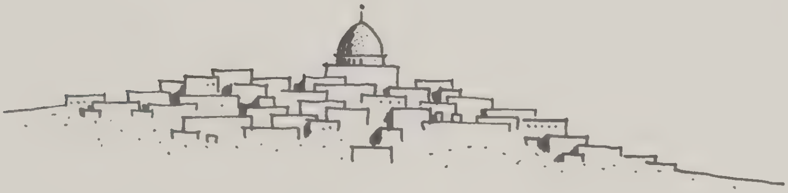
COVER–ROOF–CUPOLA

COVER: An accidental phenomenon with definite shape.

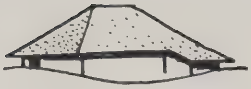


ROOF: A functional structure with definite form.

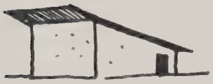
CUPOLA: A symbolic creation with definite style.



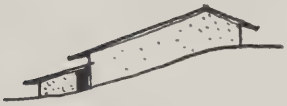
A ROOF, like a hat, gives protection and expression:



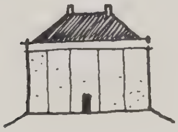
caution



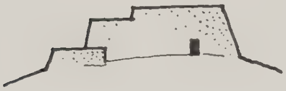
joy



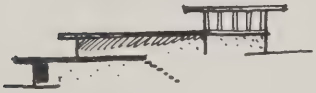
relaxation



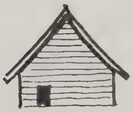
self-control



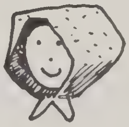
calm

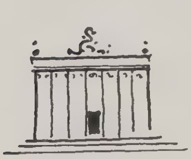


excitement



modesty





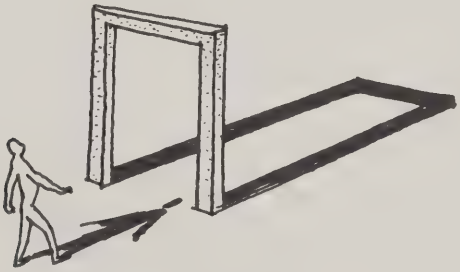
dignity

HOLE-OPENING-DOORWAY

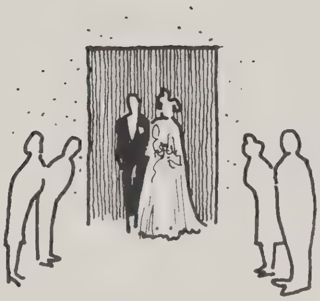
HOLE: For primitive man.

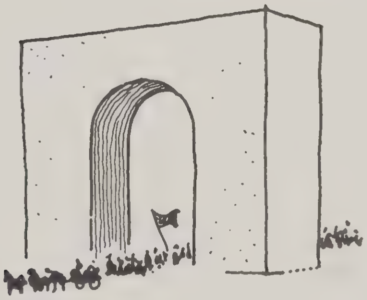
OPENING: For any man.

DOORWAY: For special man.



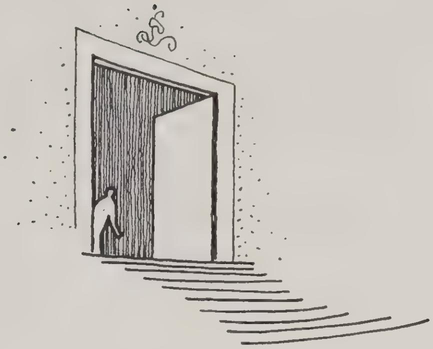
The DOORWAY, an important problem of scale.

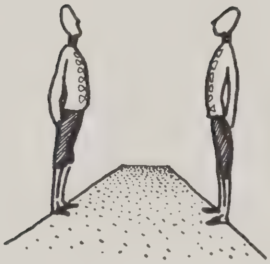


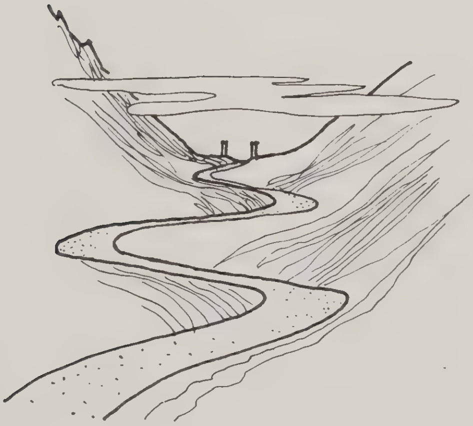


The doorway may imply:

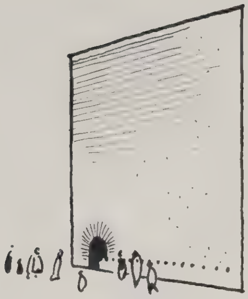
1. **Honor**



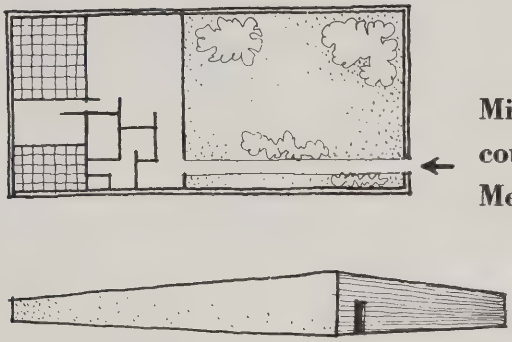




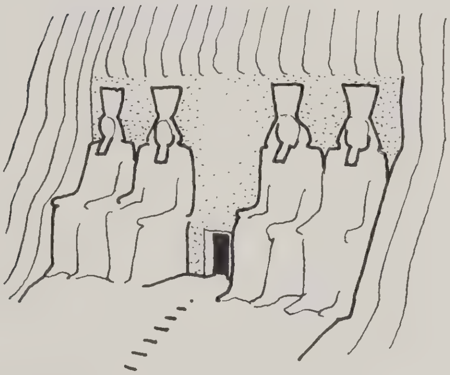
2. Mystery



Frank Lloyd Wright's
Morris shop in San Francisco 1949

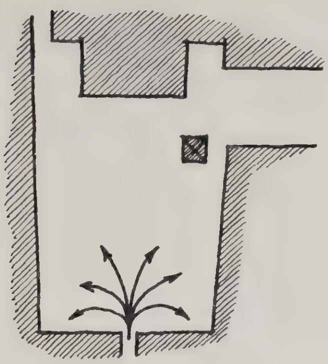


Mies van der Rohe's
courthouse project 1934
Megaron house ca. 2000 B. C.

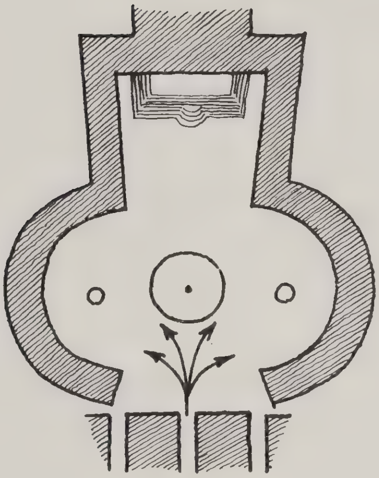


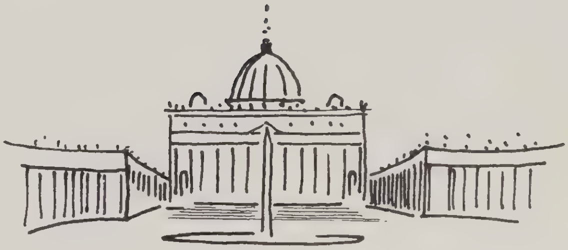
Abu Simbel temple in Egypt
1330 B. C.

3. Surprise

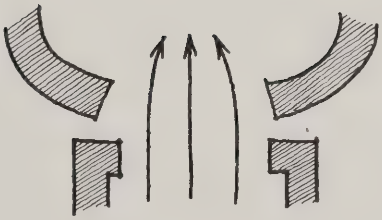


St. Mark's square in Venice





Saint Peter's square in Rome



(effect destroyed by demolitions in 1930)

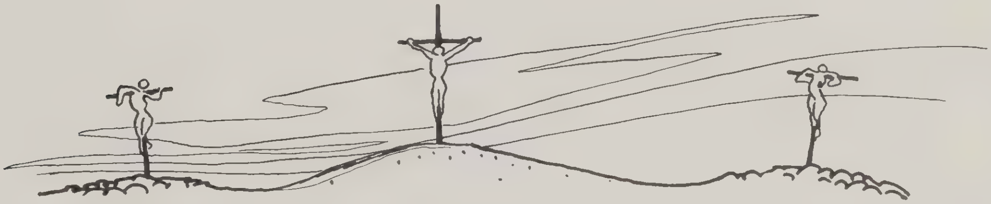
SYMBOLS

Man has always attached importance to the use of symbols, for example the cross and the circle.

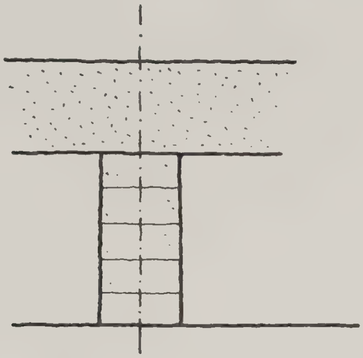
The CROSS.

⊤	**crux commissa**
+	**crux equilateralis**
†	**crux immissa**
✕	**crux decussata**

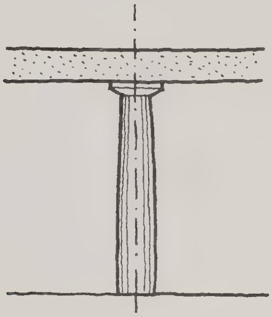
Some early representations of the Crucifixion show the crux immissa for Christ and the crux commissa for the thieves:



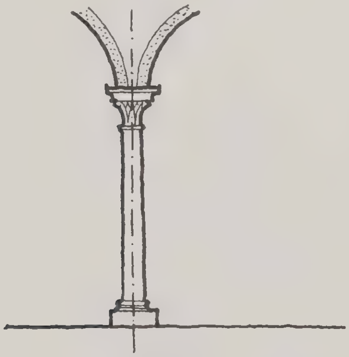
The cross symbolizes the act of bearing.



⊤ **visual emphasis on weight:**
support and load



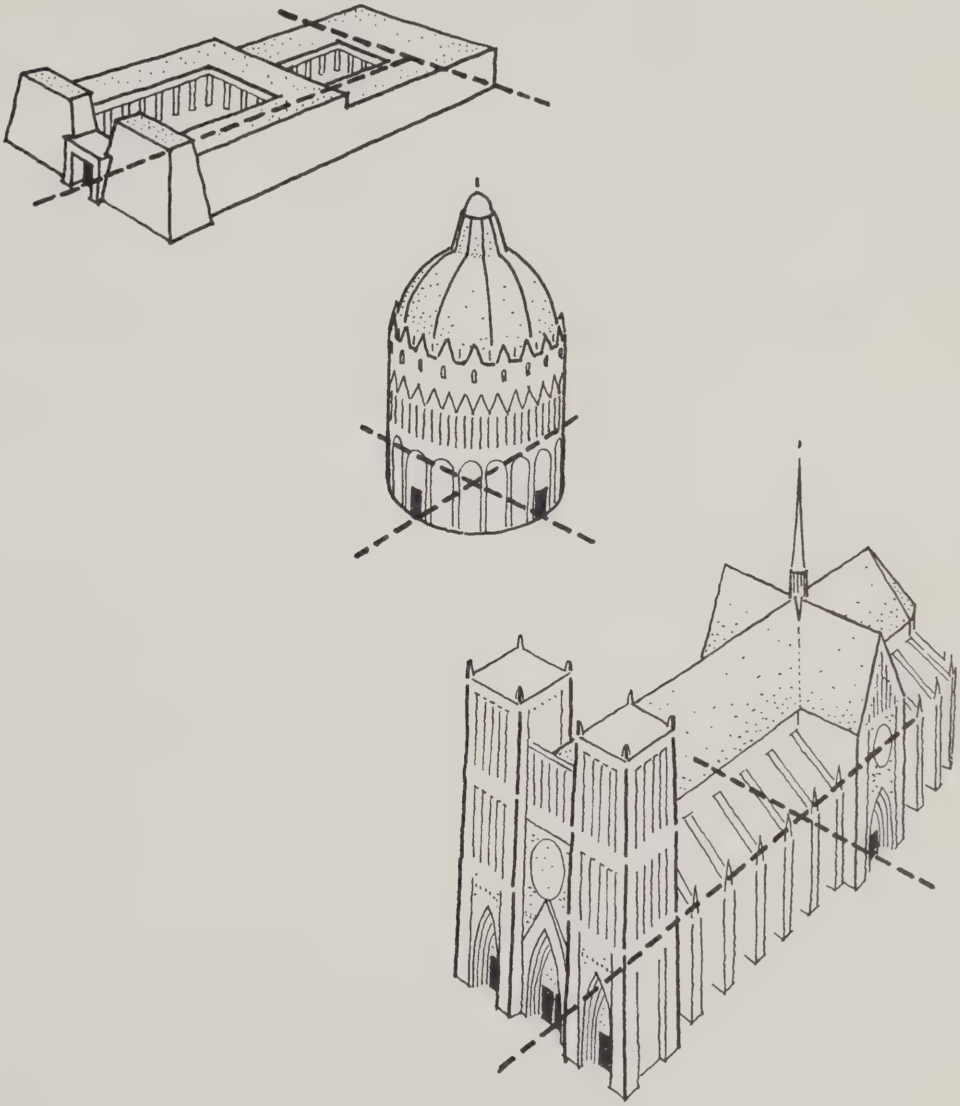
┼ **visual equilibrium:**
post and lintel



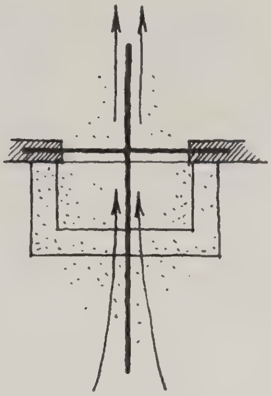
† **visual negation of weight:**
column and arch

The cross also symbolizes order; it appears in axial compositions.

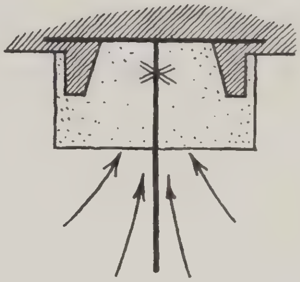
Axial compositions have a tremendous power of attraction; they should be applied only where the symbolic value of the object justifies the attraction.



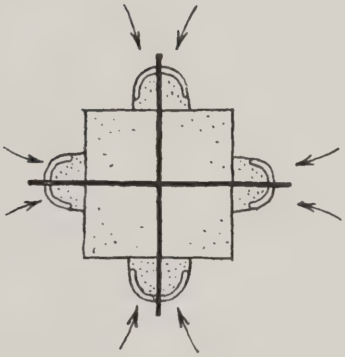
Elements justifying axial composition in domestic architecture:



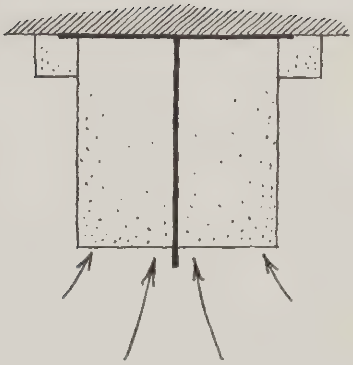
entrance door



fireplace

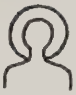


dining table



master's bed

The CIRCLE.

○	individual organism (biology)
☉	sun (astronomy)
	nimbus (Christian art)

Combinations with the cross:

⊕	earth (astronomy)
⊛	sacred monogram (Christian art)
♁	triumph of the Gospel (Catholic church) male organism (biology)
♀	Venus (astronomy) female organism (biology)

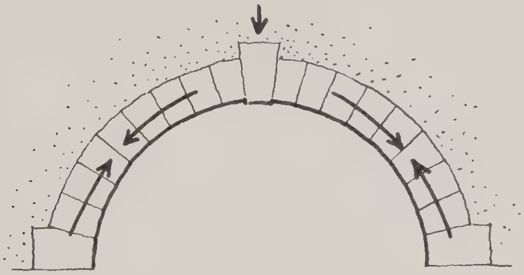
"Do not disturb my circles"..........................(Archimedes)

The circle symbolizes enclosure.

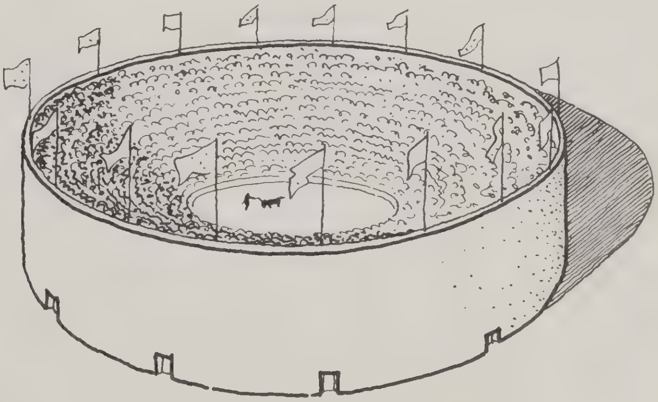
The circle also symbolizes unity.

A ring unites husband and wife;

an arch unites load and support;

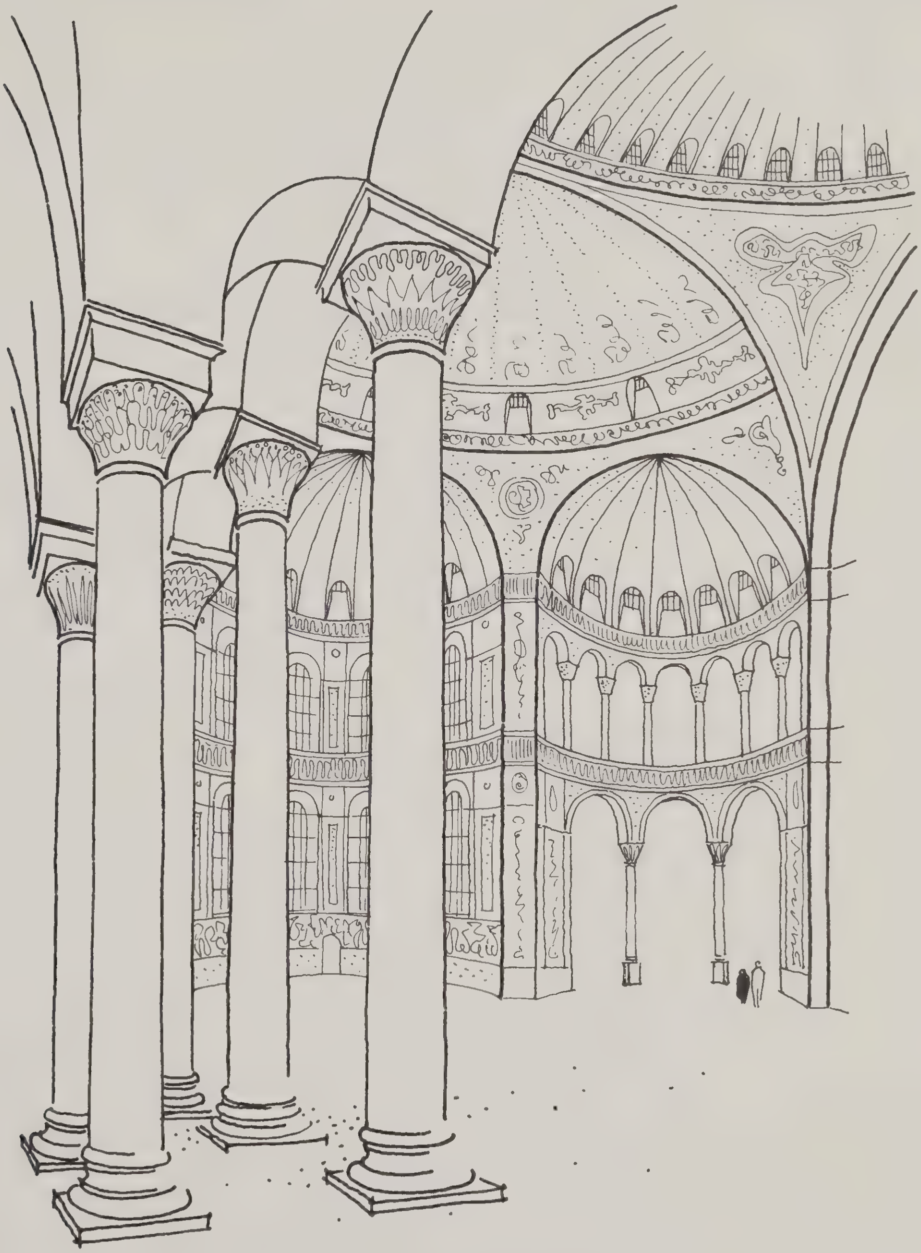


a circus (arena, "ring") unites spectators and spectacle.



The circle appears with both symbolic meanings in religious architecture:

**Churches enclose God (or an idea of God) and unite people.
They have always inspired architects to search for circular forms from the simple arch to complex systems of arches, vaults, and domes.**



NUMBERS and PROPORTIONS

"Numbers are the highest degree of knowledge." (Plato)

Pythagoras associated numbers with certain ideas:

2 female
3 male
5 love $(2 + 3)$.

Euclid called:
6 $(1+2+3=6)$ a perfect number
8 $(1+2+4<8)$ a deficient number
12 $(1+2+3+4+6>12)$ an abundant number.

The use of numbers is essential in all three Vitruvian elements of architecture:

stability (statics)
utility (cubage)
beauty (proportions).

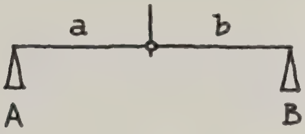
In architectural composition odd numbers are stronger than even numbers:

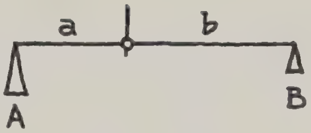
$\left.\begin{array}{l}\text{1 step is}\\ \text{3 steps are}\end{array}\right\}$ stronger than 2

$\left.\begin{array}{l}\text{1 opening is}\\ \text{3 openings are}\end{array}\right\}$ stronger than 2

$\left.\begin{array}{l}\text{1 story is}\\ \text{3 stories are}\end{array}\right\}$ stronger than 2.

There are two ways of creating equilibrium:

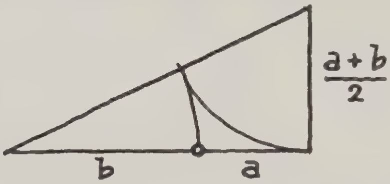




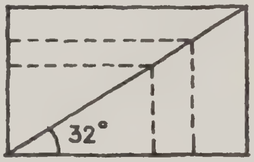
$$\frac{\text{weight A}}{\text{weight B}} = \frac{\text{length a}}{\text{length b}} \qquad \frac{\text{weight A}}{\text{weight B}} = \frac{\text{length b}}{\text{length a}}$$

The **Golden Section** establishes a pleasing relationship between two unequal lengths:

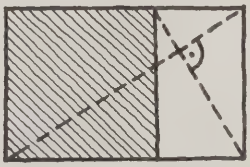
$$\frac{a}{b} = \frac{b}{a+b}$$



This relationship can be represented by a rectangle of "golden" proportions in which the diagonal has an angle of approximately 32 degrees to the longer side.



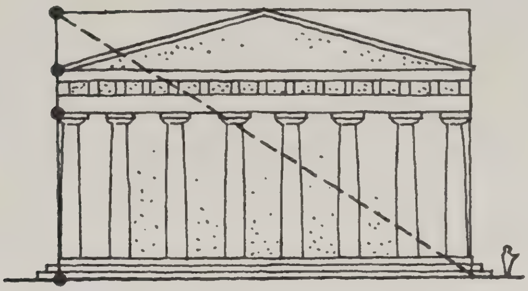
This rectangle can be subdivided into a square and a smaller rectangle of the same proportions.



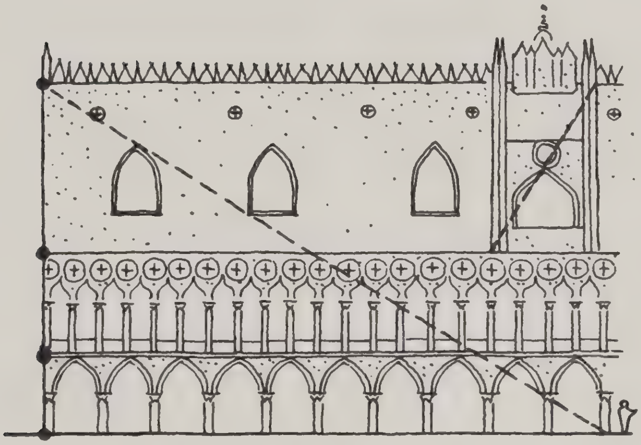
To approximate the Golden Section the architect may use parts of the Fibonacci series in which each term is the sum of the two preceding ones:

3 - 5 - 8 - 13 - 21

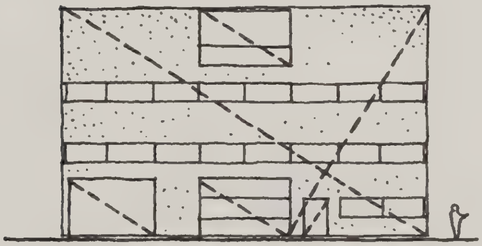
Examples of the Golden Section are found throughout history:



Parthenon, Athens
438 B. C.



Doge's Palace, Venice
ca. 1400



Le Corbusier's house
in Garches 1927

CONCLUSION

The position of the architect in the world may be summarized as follows:

THE ATTITUDE TOWARD MAN.

The architect ministers to the health of man; by understanding all his physical needs he will be able to create practical buildings.
The architect ministers to the soul of man; by understanding all his spiritual needs he will be able to create beautiful buildings.

THE ATTITUDE TOWARD MANKIND.

The architect should be aware of his responsibility not only toward a single man but toward mankind. He should know that every stone he puts on the ground is a landmark of his civilization.

THE ATTITUDE TOWARD THE PAST.

The architect can not plan for the future without knowledge of the past. History will give him a scale of value with which to measure his own contribution.

THE ATTITUDE TOWARD THE FUTURE.

The architect should have the spirit of a pioneer, always seeking new ideas and new methods to achieve the ideal of beauty and truth.

THE PROFESSION OF THE ARCHITECT.

The profession of the architect may be defined as the position of a man who has to affirm a belief and fight for it.

An architect must profess:

his interest in man,
his interest in mankind.
his respect for the past,
his hope for the future.

Only then will he be a worthy representative of the noblest and most fascinating profession:

ARCHITECTURE

GLOSSARY

Cult	Ceremonial veneration of an idea, an object, a person, or a God.
Cupola	Domed roof used on a building for a symbolic purpose.
Doorway	A passage developed or enhanced for its symbolic value.
Mure	A wall which symbolizes the thing it encloses or supports.
Shape – Form – Style	
Shape	The physical appearance of an object.
Form	An intelligible shape.
Style	Form which has developed symbolic value.
Socle	A base for any object that has to symbolize something.
Trace	A sign or evidence of something once present.

“I shall define Beauty to be a harmony of all the parts, in whatsoever subject it appears, fitted together with such proportion and connection, that nothing could be added, diminished or altered, but for the worse.” (Leon Battista Alberti)

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